SWETUGG

A lap around Azure Event Grid

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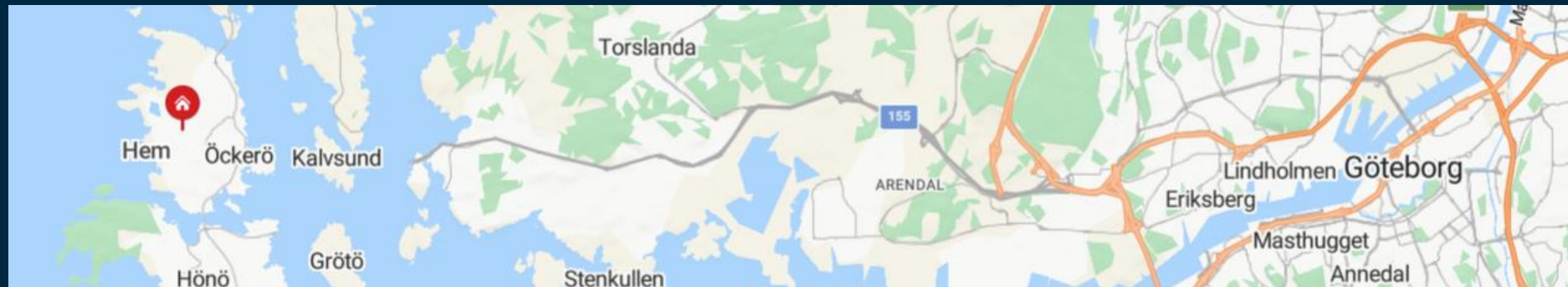*Principal Consultant*

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skastberg

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Messages

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Event Grid, sources and handlers

- Event Routing Service
  - Managed
  - Pub/Sub
  - Retry mechanism
- Sources
  - Publish to topics
    - System
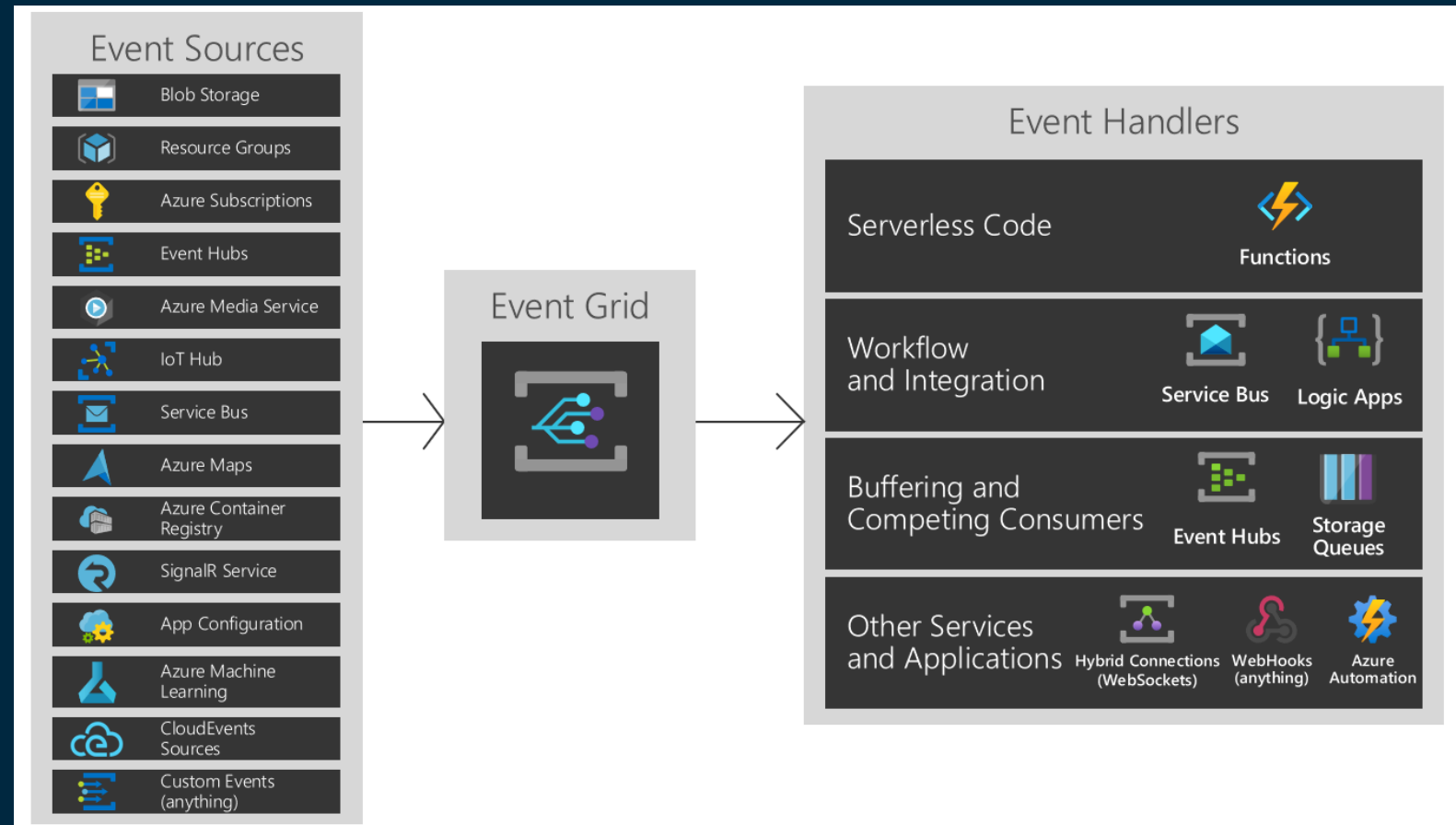   - Custom
- Handlers subscribe
  - Filtering

Image: https://devblogs.microsoft.com/azure-sdk/event-grid-client-libraries/

Message formats

- Event Grid
- CloudEvent
- Custom

```
{
    "specversion": "1.0",
    "type": "Microsoft.Storage.BlobCreated",
    "source": "/subscriptions/{subscription-id}/resourceGroups/{resource-group}/providers/Microsoft.Storage/storageAccounts/{storage-account}",
    "id": "9aeb0fdf-c01e-0131-0922-9eb54906e209",
    "time": "2019-11-18T15:13:39.4589254Z",
    "subject": "blobServices/default/containers/{storage-container}/blobs/{new-file}",
    "data": {
        "api": "PutBlockList",
        "clientRequestId": "4c5dd7fb-2c48-4a27-bb30-5361b5de920a",
        "requestId": "9aeb0fdf-c01e-0131-0922-9eb549000000",
        "eTag": "0x8D76C39E4407333",
        "contentType": "image/png",
        "contentLength": 30699,
        "blobType": "BlockBlob",
        "url": "https://gridtesting.blob.core.windows.net/testcontainer/{new-file}",
        "sequencer": "00000000000000000000000000099240000000000c41c18",
        "storageDiagnostics": {
            "batchId": "681fe319-3006-00a8-0022-9e7cde000000"
        }
    }
}
]

    "metadataVersion": "1"
    }
]
```

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Validation

```
{
  "webhook-request-callback": "https://rp-westeurope.eventgrid.azure.net:553/eventsubscriptions/ce-subscription99/validate?
preview&token=xyQQyhzXmtBT0upedf0VO0t05%2b8Yki0OKMBg13pSEvs%3d",
  "webhook-request-origin": "eventgrid.azure.net",
  "x-forwarded-for": "10.10.10.7",
  "x-forwarded-host": "cloudevents.free.beeceptor.com",
  "x-forwarded-proto": "https",
  "accept-encoding": "gzip"
}
```

```
    "subject": "",
    "data": {
      "validationCode": "6551FC5B-5BD6-4D36-8CD5-F47ADBE9B057",
      "validationUrl": "https://rp-westeurope.eventgrid.azure.net:553/eventsubscriptions/lab-subscription2/validate?id=6551FC5B-5BD6-4D36-8CD5-F47ADBE9B057&
t=2023-10-24T09:42:59.4945492Z&apiVersion=2021-10-15-preview&token=G5meKSkjX6MzA9NdY9mFmVVDs25Pzz5CmRLa95Xiqc4%3d"
    },
    "eventType": "Microsoft.EventGrid.SubscriptionValidationEvent",
    "eventTime": "2023-10-24T09:42:59.4945492Z",
    "metadataVersion": "1",
    "dataVersion": "2"
}]
```

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Demo: System Events
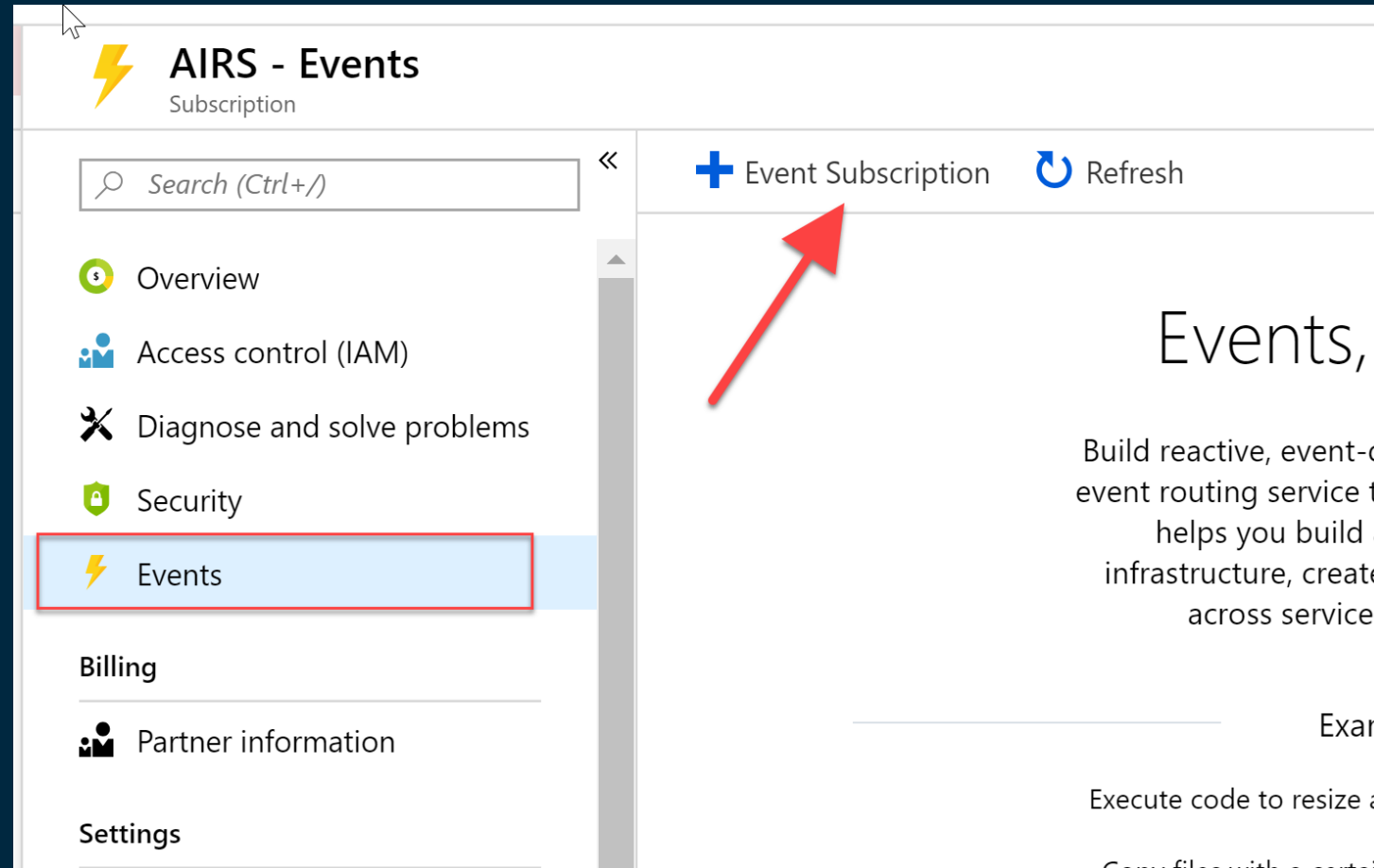
Cost by operations

Published	Subscriptions	Operations	Cost $
1000000	1	1900000	1,14
1000000	10	19900000	11,94
1000000	100	199900000	119,94
1000000	300	599900000	359,94
60000000	1	119900000	71,94
60000000	150	17999900000	10799,94

Domains

- Consolidates
  - Multiple topics to a single endpoint
  - Find topics in one place
- Partner Events connects to SaaS solution

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Demo: Publishing Custom Events

```csharp
static void SendCloudSchemaEvent(DefaultAzureCredential credential)
{
    // Set up the Event Grid client
    // Event Grid endpoint from the portal
    var endpoint = new Uri(configuration["CloudEventsEndpoint"]);
    var client = new EventGridPublisherClient(endpoint, credential);

    var data = new
    {
        doorId = 456,
        buildingName = "DobsTower",
        customerName = "Cloud Event",
        email = "johndoe@cloud.com"
    };
    string etype = data.doorId % 2 == 0 ? "contoso.building.door.open" : "contoso.building.door.close";
    var newEvent = new CloudEvent(
            new Uri("building:DobsTower:door:456").ToString(),
            etype,
            new BinaryData(Newtonsoft.Json.JsonConvert.SerializeObject(data)),
            "application/json" );

    newEvent.Id = Guid.NewGuid().ToString();
    var json = Newtonsoft.Json.JsonConvert.SerializeObject(newEvent);
    client.SendEvent(newEvent);
}
```
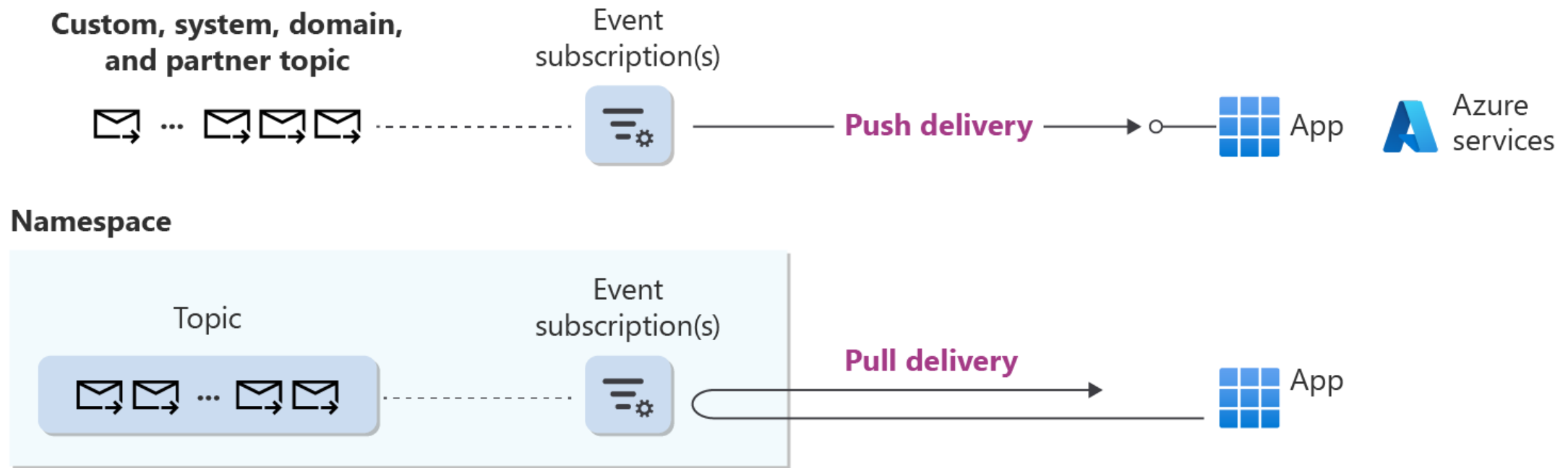
What is comming?

- Pull delivery
- M

Clients - D

Custom, system, domain, and partner topic

Event subscription(s)

Push delivery → App → Azure services

Namespace

Topic

Event subscription(s)

Pull delivery → App

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Demo: Push-Pull approach

```
      Send Request
32    POST {{$dotenv namespace}}/topics/workitems-lab:publish?api-version=2023-06-01-preview
33    Content-Type: application/cloudevents+json
34    Authorization: SharedAccessKey {{$dotenv accessKey1}}
35
36    {
37        "specversion": "1.0",
38        "type": "workitems.paint",
39        "source": "/mycontext",
40        "id": "{{$guid}}",
41        "time": "{{$datetime iso8601}}",
42        "subject": "orders/O-{{orderId}}/workitems/{{workitemId}}",
43        "data": {
44            "orderId": "O-{{orderId}}",
45            "workitemId":"{{workitemId}}",
46            "doneBy":"Samuel"
47        }
48    }
```

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Resources

- What do you mean by "Event-Driven"? - Martin Fowler

- Resource collection for messaging and eventing - Clemens Vasters

- Azure Event Grid Deep Dive - Javier Fernandez

- Presentation repository

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Thank you for this time!
See you in:
Stockholm 7-8 February 2024

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